

# PATENT COOPERATION TREATY

From the  
INTERNATIONAL SEARCHING AUTHORITY

To:  
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## PCT

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Applicant's or agent's file reference  18770.003		Date of mailing (day/month/year) <b>31 MAY 2005</b>	
International application No.  PCT/US05/03665		International filing date (day/month/year) 09 February 2005 (09.02.2005)	
International Patent Classification (IPC) or both national classification and IPC  IPC(7): B01D 53/34; B01J 8/00; C10L 1/00 and US Cl.: 423/212, 213.2, 213.5; 44/300		Priority date (day/month/year) 09 February 2004 (09.02.2004)	
Applicant  02DIESEL CORPORATION			

1. This opinion contains indications relating to the following items:

- ☒ Box No. I      Basis of the opinion
- ☐ Box No. II      Priority
- ☐ Box No. III      Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV      Lack of unity of invention
- ☒ Box No. V      Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI      Certain documents cited
- ☐ Box No. VII      Certain defects in the international application
- ☐ Box No. VIII      Certain observations on the international application

### 2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/ US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (703) 305-3230	Authorized officer Jonas N. Strickland Telephone No. 571-272-1700 <div style="text-align: right; margin-top: 20px;"> </div>
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**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/US05/03665

**Box No. I Basis of this opinion**

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This opinion has been established on the basis of a translation from the original language into the following language \_\_\_\_\_, which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).

2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

a. type of material

☐ a sequence listing

☐ table(s) related to the sequence listing

b. format of material

☐ in written format

☐ in computer readable form

c. time of filing/furnishing

☐ contained in international application as filed.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITYInternational application No.  
PCT/US05/03665**Box No. V Reasoned statement under Rule 43 bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement****1. Statement**

Novelty (N)	Claims <u>1-10</u>	YES
	Claims <u>NONE</u>	NO
Inventive step (IS)	Claims <u>NONE</u>	YES
	Claims <u>1-10</u>	NO
Industrial applicability (IA)	Claims <u>1-10</u>	YES
	Claims <u>NONE</u>	NO

**2. Citations and explanations:**

Claims 1-10 lack an inventive step under PCT Article 33(3) as being obvious over EP 1227143 A1 in view of WO 97/09114.

EP '143 discloses a fuel additive composition comprising an oleic alkanolamide and an alkoxyated oleic acid, as well as an ethanol/diesel fuel blend (see abstract and p. 3, lines 14-30). The diesel fuel is present in a concentration of 60 to 95% by volume. The amount of ethanol is from 5 to 20% by volume. The ethanol is fuel grade. The fuel blend is a clear homogeneous solution (p. 4, lines 47-52). EP '143 also discloses a surfactant (p. 5, lines 11-19). However, EP '143 does not disclose having an oxidation catalyst comprised of a platinum metal on a molecular sieve.

WO '114 teaches the use of a catalyst in a catalytic combustion process of fuels such as ethanol, wherein the catalyst is comprised of a platinum metal on a carrier (see abstract and p. 10, lines 21-31).

Therefore, it would have been obvious to one of ordinary skill in the art to modify the teachings of EP'143 based on the teachings of WO '114 by treating a diesel fuel blend comprised of ethanol with a platinum oxidation catalyst, with the expectation of reducing the particulate matter content of the exhaust gas by at least 25%, because WO'114 teaches wherein it is known in the art to treat an exhaust gas from a diesel engine comprised of a fuel having ethanol with a platinum-catalyst. EP'143 clearly discloses wherein it is known in the art to have diesel fuel/ethanol blends along with fuel additives.

Claims 1-10 meet the criteria set out in PCT Article 33(2), because the prior art does not teach or fairly suggest a method of reducing particulate matter content of a diesel engine exhaust, wherein the method comprises operating a diesel engine utilizing as the fuel an ethanol/diesel fuel blend; and contacting the exhaust with a diesel oxidation catalyst for an amount of time sufficient to reduce the particulate matter content by at least 25%.

Claims 1-10 meet the criteria set out in PCT Article 33(4), and thus exhibit industrial applicability because the subject matter claimed can be made or used in industry.